UNITED STATES DISTRICT COURT

DISTRICT OF MASSACHUSETTS

MDL NO. 1456

CIVIL ACTION: 01-CV-12257-PBS

JUDGE PATTI B. SARIS

IN RE PHARMACEUTICAL INDUSTRY
AVERAGE WHOLESALE PRICE
LITIGATION

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THIS DOCUMENT RELATES TO ALL
CLASS ACTIONS

C O N F I D E N T I A L

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Deposition of Meredith Rosenthal, Ph.D.

Thursday, February 23, 2006

9:13 a.m.

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P-R-O-C-E-E-D-I-N-G-S
MEREDITH ROSENTHAL, Ph.D.,
having been satisfactorily identified by the production of her driver's license, and duly sworn by the Notary Public, was examined and testified as follows:
DIRECT EXAMINATION
BY MR. CAVANAUGH:
Q. Good morning, Dr. Rosenthal.
A. Good morning.
MR. CAVANAUGH: Let me just put on the record that because of some sort of an administrative foul-up we are starting without a videographer, but we have an agreement with plaintiffs and all the parties that we will not -- the fact that a portion of this deposition will not be videotaped will not provide an objection to the utilization of those portions which have been videotaped and the use of that videotape.
MR. MACORETTA: That's correct.
BY MR. CAVANAUGH:

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Q. Dr. Rosenthal, you would you agree with me that there is nothing wrong per se with price increases?
A. Could you please just be a clear what you mean by "wrong"?
Legally? Ethically?
Q. As far as you know, there is nothing economically, legally, ethically wrong with a price increase by a supplier?
A. In that general statement, there is nothing wrong with price increases.
Q. Would you also agree with me that price increases happen frequently in markets?
A. Certainly.
Q. When you go to the store and pay for groceries, you're paying more for items than you did five years ago, right?
A. Yes. That's true.
Q. And suppliers will increase their prices for a variety of reasons, correct?
A. Yes, that's certainly true.
Q. To keep up with inflation, correct?

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A. That may be true, yes.
Q. To keep up with rising costs?
A. Those two things I would consider the same thing, yes.
Q. Because of a determination that the supplier can increase its profitability by increasing price because it won't have a corresponding sacrifice in terms of the sales of numbers of units?
A. As we were discussing yesterday, if there was change in the responsiveness of demand to price, there might be a reason for a price increase, as you suggest.
Q. Is there any economic principle of which you are aware that requires that published list prices and actual selling prices to track one another?
A. There are few markets that we can look at where there is a third-party payer paying off one of those prices and an intermediate buyer paying off another one of those.
So is there an economic principle? I

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think this has not really been looked at in an economic model that I know of saying that there should be a relationship there.
There are few contacts where we have this situation where there is a list price paid by one end payer and the intermediate price.
Q. Can you give me some examples?
A. Well, you know, what I would like to suggest is that this is very different from other places where we see list prices.
For example, what has come up is the notion of a sticker price for an automobile, for example, but it's the same buyer who faces that sticker price and the potential discounting there.
Whereas, it's a very different kind of market where the sticker price is the only information available to a third-party payer who is the ultimate payer, and then this discounted price is concealed from that payer.
Q. Would you agree with me that in the market you've just described that the ultimate payer was aware that the intermediaries' actual acquisition

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price was unknown to the ultimate payer?
A. The third-party payers knew that they didn't know the acquisition price?
Q. Yes.
A. Yes.
Q. So, for example, let me stick with your analogy about a sticker price.
When I, as a purchaser, see a sticker price, for example, for an electronic item, I don't know what the intermediate seller's actual acquisition price is, do I?
A. I think this is a very different scenario than the one you are talking about.
So I would say the scenario is more like this: You need to buy some electronics for the purpose of your job, and there is a sticker price, and you go and the seller gives you a receiver with the sticker price on it, but also gives you a discount.
You go and expense that item, and it gets expensed at the higher rate, you get reimbursed at that higher rate, knowing the

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supplier continues to raise that sticker price and offer you under-the-table discounts.
Q. What if the entity to which I am submitting my reimbursement is well aware that they don't know what my -- what I actually paid for the item?
A. When you say "well aware," I think that covers a lot of territory.
Knowing that you don't know the absolute price, as you may not know about these discounts, mail-in discounts that happen subsequently in some way that aren't observable to your employer reimbursing you, you may have an expectation of what the magnitude of what those discounts may be.
That's not the same as saying I have no information whatsoever. You don't know the actual number.
Q. Third-party payers were certainly aware that discounts were occurring?
A. My knowledge is, yes, they were aware.
Q. They were aware that they didn't know what

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the actual acquisition price is as a result of those discounts, correct?
A. They had fairly -- based on looking at the contracts that were written in this market -- they had a fairly narrow defined set of expectations about what those discounts were.
Contracts don't vary widely, as we've seen in the Dyckman survey, these other surveys.
Q. And, again, can you just review for me your data sources for defining the expectation of a range of acquisition costs?
A. The data sources are primarily the survey information that was reported in the MedPAC report that looked at what payers were actually allowing in terms of a percentage of AWP that they reimbursed to the providers.
In addition, some public reports about the range of discounts, including ASCO, that we talked about yesterday, that said discounts are typically on the order of 20 percent and other records similar to that.
Q. You would include the OIG reports that we

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talked about yesterday?
A. Those are all pieces of information.
Q. Let me ask you to turn to page --
A. Is this my stack?
Q. Yes. Page 17 of your report.
A. Okay. I am here.
Q. Paragraph 37. You're discussing the ASP for Zoladex.
A. Yes.
Q. You say, quote, "The ASP for Zoladex began to decline rapidly and at the same time the AWP was raised."
Did you look at the extent to which any physicians or clinics were purchasing Zoladex at WAC?
A. With standard economic practice, I am looking at the average here in terms of the ASP, the average which is the expected value. So I'm not looking at other parts of the distribution.
Q. So the answer to my question would be, no, you did not look at whether any customers were paying WAC for Zoladex?

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A. It was not necessarily for my analysis to do. So I did not do so.
Q. For there to be, in your view, an inflated AWP, what elements are required?
A. Essentially the inflation of the AWP here is defined as a divergence of the AWP from ASP beyond the market expectation.
Q. If ASP declines, but AWP stays steady, is there AWP inflation, in your view?
A. In my view, yes.
Q. That is because in your view the manufacturer should have reduced the published AWP?
A. Yes.
Q. Now, we talked about that a little yesterday, and I want to go back to some testimony you gave.
You indicated that there were no standard conventions that you are aware of in terms of the frequency with which AWP could be revised to keep it in some relationship to an evolving ASP, correct?

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A. I believe we were talking about the ideal frequency. Is that what you mean?
Q. Yes.
A. As opposed to the publishers releasing their data on a regular schedule, but we were talking about the ideal.
Q. I believe you agreed with me that ASP could change -- ASP on a particular drug or in a particular NDC could change on a daily or weekly basis, certainly?
A. It certainly could do so.
Q. Now, you indicated at one point that it would not be, from your perspective, particularly difficult to change published AWPs based upon changing ASPs because all you are talking about is electronically changing numbers, correct?
A. It is certainly in the current period my understanding those numbers are disseminated in electronic form, generally speaking.
Q. Now, that wasn't always true?
A. I am sure that wasn't always true.
Q. And would you agree with me that to the

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extent that pricing services were not doing this all electronically, it would certainly be far more difficult to do the type of system that you are talking about?
A. It would certainly be more difficult. I can't tell you what the exact cost would be.
Q. And you have done nothing to study the feasibility of that type of system, have you?
A. No, I have not. No, that's not the scope of my report.
Q. And you haven't done it with respect to an electronic system, or certainly in an earlier period, a paper system?
A. No, I have not.
Q. And just so we're clear, we talking about a system that would require, with certain frequency, changing AWPs to reflect changes in ASP, correct?
A. We had now been talking about updating AWP to reflect changes in ASP, correct.
Q. Now, how many prescription drugs are there currently on the market?

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A. I believe in terms of NDC codes, it's on the order of 60,000, 50,000.
Q. So what you would be talking about here is, with some frequency, changing the reported AWPs on 50 to 60 thousand NDC codes?
A. To the extent that the ASP changes.
Q. Have you talked to any of the pricing services about the ability to every day, every week, every month, change published AWPs on something of the order of 50,000 to 60,000 drugs?
A. No, I have not.
But let me remind you, as we look at this data, that I remember annual averages that show the -- divulge your presumption that daily updates would be required, I think has -- as we discussed, we have found no basis for that.
Q. Well, no. I am asking -- it's your position, am I correct, that there should be, with some frequency, a revision of AWP based upon changing ASP, correct?
MR. MACORETTA: I object.
A. That's correct.

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Q. And are you offering an opinion as to how frequently that should have occurred, in your view?
A. As I said before, I don't really have the basis for that opinion, but I don't have the basis for suggesting that it's daily.
That's all I am saying. You are the one that is talking about daily.
Q. Well, you've indicated to me that it would not surprise you if the ASP, the actual average selling price for a drug could change on a daily basis?
A. That's correct.
Q. So I'm trying to explore with you under your theory that there should have been some change in reporting of AWPs based upon changes in ASP how frequently do you think it should have happened?
A. I don't have the information to give you an opinion on that.
Q. Have you seen any reimbursement rates that are in excess of a hundred percent of AWP?

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A. I'm sorry, any reimbursement rates that are in excess -- oh, that's physician reimbursement rates?
Q. Yes.
A. Yes. In the survey data, some were in excess of a hundred percent of AWP.
Q. And what is your understanding as to why a third-party provider would provide a reimbursement rate in excess of a hundred percent?
A. Oh, I -- I can't certainly get into any one provider's head, but I would say there are two factors based on economic theory: One would be market power of the entities, the payer, on the one hand, and the provider, on the other.
There would be the expectation about what -- at what discounts off of the AWP the provider was able to acquire the drug. Those two factors.
Q. Would you agree with me that certain physician or clinic groups may have, well, market power in their negotiations with third-party

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providers?
A. Certainly.
Q. Would that market power give them the ability to extract higher reimbursement rates for services or for drugs from a third-party provider?
A. That would be, more or less, the definition of market power, yes.
Q. Have you studied, if, at all, the degree of market power among physician groups with respect to their ability to extract higher reimbursement rates from third-party providers?
A. In my report I believe I cite some studies that physicians do have market power as well as it's certainly well-known that if you take as an index of that market power the level of income of specialist physicians. Of course, some has to do with training as well.
Q. In your view, has the market power of physician groups contributed to the reimbursement rates that they receive for fees and services from third-party providers?

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A. Certainly, all things equal, providers with greater market power will be paid at a higher rate than providers with less.
Q. Now, you say "all things being equal." Why are you providing that caveat?
A. Well, I think it's important to note that we may be talking about differences across providers in, for example, the percentage of AWP that they are reimbursed, but at the same time they may all be earning what is called rents as a result of this higher AWP relative to an unseen acquisition costs.
Q. What do you mean by "earning rents"?
A. Profits, excess profits.
Q. And to what extent did you studied whether those -- to what extent those excess profits are attributable to the market power of physicians?
A. I have not examined that question carefully. It is not relevant to my analysis.
Q. And why wouldn't it be relevant to your analysis to determine to what extent the reimbursement rates earned by providers from

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third -- from physicians -- strike that. Start all over again.

Why is it not relevant to your inquiry here to determine to what extent the market power of physicians have contributed to the reimbursement rates that they have negotiated with third-party providers?

A. Again, my analysis uses a standard economic approach, where we are looking at the margin: what is the incremental effect of a change in the spread on payments by third-party payers and these other factors that may affect the underlying levels, just as we talked about yesterday, the therapeutic relationships of these drugs, they are in that all-else-equal category.

So the question is -- we could talk about many factors here, but they are not relevant to looking at the incremental effect of AWP inflation on what third-party payers pay. They are underlying factors in the market.

Q. Well, did you do any regressions to attempt to address the issue of -- to what extent

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the market power of physicians contributed to the reimbursement rates that they earned --

A. That analysis would not be relevant to my findings. So I did not.

Q. Let me ask you to turn to Page 1 of your report.

In the second bullet point you refer to "empirical clues in the invoice data supplied by the defendants that suggest AWP inflation."

What empirical clues are you referring to?

A. These are the data that I examined that you see in those charts association with the entry of Kytril as well as the change in reimbursement for Zoladex in which Zoladex -- Lupron reimbursement became tied to Zoladex.

Q. Let's stick with the Lupron and Zoladex.

Why is that an empirical clue as to AWP inflation?

A. A change.

Looking for a change in the incentive, and for the response to that change as a test of

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this theory that AWP inflation is a competitive device in the context of the reimbursement incentive of the AWP-based reimbursement system.

Q. What is the incentive to which you are referring?

A. So the incentive at baseline was competition based on the spread between Zoladex and Lupron.

When the least costly alternative policy went into place, Lupron -- some of the gain from AWP did not accrue to Lupron because they are selling at the same AWP at that point.

Q. Again, was there a change in the competitive environment as a result of the two drugs sharing the same AWP?

A. The change in this case is in the incentives that are brought about by the reimbursement system.

Q. What effect did that change in incentives have?

A. The effect was for the AWP of Zoladex to remain at its current level.

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Q. Did you look to see to what extent that had an impact on physician utilization of either drug?

A. I didn't need to. That wasn't necessary for me to draw these conclusions.

Q. Now, after LCA was implemented, did AstraZeneca raise its AWP?

A. Not in these data.

Q. Wouldn't it have been profit-maximizing for AstraZeneca to raise its AWP after LCA?

A. Why would you say that?

If they raise their AWP, the amount that the spread increases for Zoladex is the same amount by which the spread increases for Lupron, because Lupron is now being compensated based on the same AWP; and if the reason for raising the AWP was competition against Lupron, then there is no longer incentive to do that.

Q. And what AstraZeneca could do is raise its AWP, and then different could you see --

A. There is no reason to raise the AWP. There is no gain from raising the AWP. It could

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discount more.
Q. Well, by doing both, would they not have been creating more spread for a physician?
A. They would be creating the same additional spread for a physician choosing Lupron because when they -- their AWP, their spread, also raises for Lupron.
Q. But if AstraZeneca then also increases the discount, it would then have, according to your theory, an advantage over Lupron, would it not?
A. If it discounts, indeed, it could compete on the discount, but there is -- when you say -- there is no reason to raise the AWP at the same time.
So, again, what I looked at here was there was a steady increase in AWP until the LCA policy comes in, and there may have been an incentive to discount at that point, but there was no incentive to raise the AWP.
Q. You also referred to in this same -- strike that.
In your report you refer to patterns

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of price changes. Can you tell me what, when you use that phrase, what you are referring to?
A. Could you just give me an example so it is in context.
Q. I am actually looking for the page in which you make that reference.
It is on Page 1.
A. Okay. Thank you.
Q. In the paragraph beginning, "I conclude."
A. Okay.
Q. "Moreover, my analysis of manufacturer invoice data demonstrates patterns of price changes in response to changes in the competitive environment that are consistent with the allegation."
What do you mean by "patterns of price changes"?
A. In particular, that first Kytril and Zofran example and also to the Zoladex example, which price changes ceased with the LCA policy.
Q. For each of the defendants; have you looked at the deposition testimony from the

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companies as to the reasons for any price changes?
A. As part of my review, I examined some depositions, but I don't rely on them specifically in my report. So I'm not sure exactly how to answer that.
Q. Well, let me take you to the two Johnson & Johnson drugs, Remicade or Procrit.
Have you examined the reason for any increases in WAC or AWP with respect to those two drugs?
A. Not specifically at specific points in time, trying to map the deposition to the changes.
Q. Well, whether it is based on internal documents or deposition testimony, do you have an opinion as to why there were increases in WAC and AWP for Remicade or for Procrit?
A. I have seen some strategic documents in a number of examples for the defendants --
Q. No. I am talking about Johnson & Johnson and the two drugs Remicade and Procrit.
Why were the prices increased at any

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point in time for those two drugs?
A. I don't have a specific cite that has any reference to that information. So I don't think I can answer that question.
Q. Do you have, as you sit here today, have an opinion as to why there were price increases for Remicade?
A. My opinion is that there may have been many reasons for price increases, but one overriding reason is the ability to drive market share by increasing the spread.
Q. Can you cite me to any document or any internal deposition testimony -- any deposition testimony from anyone from Johnson & Johnson that supports that opinion?
A. No, I cannot.
Q. Do you have any opinion as to any -- the reason for any price increase as to Procrit?
A. I cannot point you to a specific cite.
My analysis relies on some economic analysis of the incentives that are shared by all of these drugs, and therefore, would apply to

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those drugs as well.
It relies on looking at the spreads themselves, and it relies also on some strategic documents, a number of documents that show that they were well aware that AWP was a strategic device for driving market share.
Q. Let me refer you to the documents you relied upon in your report. The only reference I see to internal company documents are on the first page of your list of documents relied upon.
There is a heading, "Discovery Documents."
A. Uh-huh, right.
Q. Would you agree with me that there are no Johnson & Johnson documents identified there?
A. That's correct.
Q. And this is a list of the discovery documents that you relied upon in formulating the opinions set forth in your report, correct?
A. These are the ones that I cite in my report, that's correct.
Q. You don't cite any deposition testimony

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from any witness for any of the manufacturer defendants, including Johnson & Johnson, correct?
A. These are the strategic documents I cite.
Q. No. My question was: You don't cite in your report any deposition testimony from any witness from a manufacturer defendant, correct?
A. That is correct.
Q. You understood in preparing the list of documents that you were relying on that you were required to put forward a complete list of the materials that you were relying upon to -- in support of the opinions that are set forth in your report?
MR. MACORETTA: Objection.
A. These are the documents that I referenced, specifically with regard to forming these opinions, as disclosed earlier.
Certainly I reviewed -- as you mentioned yourself, there are a million documents in this case. I have reviewed them broadly, and these are the ones specifically that I used to build this economic case, to suggest that AWP

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inflation took place and impacted the class.
Q. In the section of your report that contains the various charts with ASP -- I may have asked you this yesterday and I apologize if I did -- would I be correct that you are relying solely on Doctor -- the numbers calculated by Dr. Hartman with respect to ASP?
A. Yes, that's correct.
Q. Are you familiar with the phrase "an events study"?
A. Yes.
Q. What is an events study?
A. An events study is an evaluation of a natural experiment, something happens in the economy, for whatever reason, and an events study looks to identify some effect by examining before and after that event, and it's a way of looking at a short time horizon, to hold other things constant.
Q. Did you conduct an events study of any of the drugs that you discuss in your report?
A. The Zoladex Kytril and Zofran examples are

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events studies.
There is a change in the environment in the short period of time to look at the events and all other economic variables are assumed to be equal.
Q. Would be I correct that your analysis did not -- your event study did not incorporate just things such as whether there were additional indications for any of these products?
A. An event studies, the basic design of an event studies is generally that one looks at a short time period, as we have here, and all those other variables are assumed to be equal.
There is no reason to believe that a change in indication would have happened precisely at the time that Kytril entered, for example.
Q. Did you look at that?
A. That's not what one generally does in an events study.
Q. So the answer is you did not look at whether there was a change in indications?
A. No. I did not look at that.

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Q. Did you look at whether there was a change in competitive conditions within this therapeutic class?
A. Other than the one I was examining?
Q. Yes.
A. No, I did not.
Q. How did you go -- would I be correct that under your events -- under the analysis that you did you kept all other things the same and only focused on the single event that you've identified in your chart?
A. That's the identifying assumption, yes.
Q. So you did not seek to determine to what extent other events may have impacted the ASPs or AWPs for the drugs you studied?
A. Again, as I mentioned, this is a standard economic research approach and that is not part of it.
The general model is to look before or after, within a short time period, and those other variables are assumed to be equal.
Q. Do the lower ASPs that you show in your

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report provide any benefit to consumers?
A. Do the lower ASPs provide any benefit to consumers? Consumers are not paying ASP. I can't see how they would.
Q. Do physicians earn more profits when ASPs are lower?
A. That's the underlying assumption, yes, always.
Q. And would the additional profitability to physicians provide any consumer benefit?
A. I can't think of any.
Q. Would the additional profitability to physicians as a result of lower acquisition costs produce any corresponding lowering of fees charged to providers or consumers, third-party providers or consumers?
A. The third-party providers are paying based on AWP, correct? So I think the underlying model is that third-party providers don't receive the benefits of the reductions in ASP.
Q. Do you know to what extent the reductions in ASP put less price pressure on administration

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fees, for example?
A. I can't say what those cross-elasticities are, no.
Q. You didn't look at that?
A. No.
Q. Would you agree with me that there is evidence in the record, for example, with respect to Part B, that there was not recognition of a cross-subsidization between reimbursement for drug costs and administrative fees?
A. I understand that the physicians claimed that there was such a cross-subsidization.
As you know, the cross-subsidization that they claimed adapted specifically well when these spreads are several hundred dollars.
Q. Have you looked at to what extent the spread would support a cross-subsidization argument?
MR. MACORETTA: I object, but go ahead.
A. I certainly have run across that argument in this case. As far as I can tell, it's a claim

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by the physicians.
Could there theoretically be a cross-subsidization? I can't really say. It's not particularly relevant to my analysis, either.
Q. My question is: Have you looked at or studied the extend to which lower ASPs put less pressure, demands for higher fees for administration or other services provided by physicians?
A. No. I did not because it was not relevant.
Q. And why wouldn't be it relevant?
A. Why would it be relevant to the question of whether AWP inflation adversely affected the class? Do these cross-subsidies accrue to the same people?
You are suggesting that those cross-subsidies might accrue to consumers. I am not sure it would be relevant.
Q. For example, when Aetna negotiates with a physician group, are they negotiating on a broad range of fees and services?

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A. Certainly.
Q. Do you think that there is any interrelationship between the fees and -- between the fees and services which are being negotiated?
A. Well, I think it's unclear.
These fee schedules for other services are set independently, to my knowledge. There is no direct relationship, direct tradeoff, that I know of, in negotiations.
Q. Do you think that there is any interrelationship between the various fees that are negotiated between a third-party provider and a physician group?
A. I think the question is really: Is there any important interrelationship that wouldn't really affect this? And the magnitudes of the overcharges with regard to the inflated AWP are so substantial that I cannot believe that this would be important, and I therefore did not believe it was important to look into.
Q. Well, if they are so substantial, then you must have evidence that third-party providers

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have completely abandoned the system which produced them?
MR. MACORETTA: Objection.
Q. Do you have such evidence?
A. I do not.
Q. Let me take you back to the events study we were talking about.
As you understand it, the purpose of an events study is to look at a short time frame; am I correct?
A. That's correct.
Q. And you were looking at a -- attempting to look at a single effect, were you not?
A. That's the idea, yes.
Q. And how did you go about assuring yourself that nothing else changed during the time frame that you were talking about?
A. Again, as a standard economic practice, one looks at a market and examines a change in short time periods.
The assumption of all else is equal is essentially part of the research design, and we

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know there may be other factors, but they -- the only assumption that is required is they are uncorrelated with this particular timing of the events that you are studying, which is not a very difficult assumption to make. Would there have been other changes simultaneous to the entry of Kytril, for example, that would have operated in a way to bias the results?
Q. At a minimum, don't you need to determine whether there were any significant events, other events during that time frame which might well impact on the single effect that you are studying?
A. To my knowledge, there were none.
Q. Are you familiar with the AstraZeneca drug Pulmicort?
A. I am.
Q. I see nothing in your expert report with respect to that drug; is that true?
A. That was not one the examples I chose, no.
Q. Do you have any opinions with respect to Pulmicort?

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A. As part of this litigation, my opinions are generalized to all of the drugs in the litigation.
Q. What specific opinions do you have with respect to Pulmicort?
A. Economic incentives to the providers of Pulmicort, which my understanding is, in most cases, were DME suppliers, other distributors of nebulizer drugs had the incentive to select those drugs based on the spread between the AWP and the ASP, the manufacturer of Pulmicort had the incentive to increase the spread in order to increase its sale.
Q. Have you done any analysis of Pulmicort data to determine whether any of those things occurred?
A. I have examined the ASPs and AWPs.
Q. And what opinions do you have with respect to Pulmicort?
A. All the drugs that are summarized in Table 1 --
Q. Will you agree Pulmicort is not in Table

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1? A. Right. We examined all of these drugs early on. Excuse me. Since this was a change. I don't have all of the drugs memorized, but I did certainly look at data for Pulmicort and the ASPs and AWPs. Q. But would I be correct that you have no specific opinions with respect to Pulmicort? A. That's not involved in my report. I did not. Excuse me for the mistake. Q. You have to keep your voice up. A. I have trouble keeping track of the drugs. Q. Would I be correct, then, that the opinions set forth in your report are limited to the drugs that are listed on Table 1? A. My conclusion about the economic incentive existence really is a general conclusion about what the reimbursement environment creates. The report is aimed at looking at these particular drugs for which these incentives appear to have had an effect.

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So I think it's fair to say that my opinions are restricted to the drugs that remain in the case; and as you know, there was a subsequent report by Dr. Hartman that changed the list of drugs in February, but my conclusions really generalize the drugs.

MR. MACORETTA: Bill, we have been going for an hour. Do you mind if we take a break?

MR. CAVANAUGH: Sure.

(A recess was taken.)

THE VIDEOGRAPHER: Stand by, please. We are now recording and on the record.

My name is Adam Cook. I am a legal video specialist for national video reporter. Our business address is 58 Batterymarch Street, Suite, 243 Boston, Massachusetts 02110.

Today is February 23, 2006, and the time is 10:42 a.m.

This is day two in the deposition of Meredith Rosenthal in the matter of In Re Pharmaceutical Industry Average Wholesale Price

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Litigation in the U.S. District Court for District of Massachusetts number 01-CV-12257-PBS.

This deposition is being taken at One Main Street, Cambridge, Massachusetts.

BY MR. CAVANAUGH:

Q. Dr. Rosenthal, could you turn to Page 19 of your report.

A. I'm on Page 19.

Q. Let me draw your attention to the chart on Remicade, which we talked about briefly yesterday.

Would you would you agree with me that the chart shows ASP generally running in line with AWP?

A. The chart shows ASP ranging from 31 percent below AWP, the markup being 31 percent relative to AWP, up to 34 percent.

Q. And that's over a five-year period?

A. That's correct.

Q. Would you agree with me that a variation of three percentage points over a five-year period is quite small?

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A. I am not sure what you mean by "quite small." I think three percentage points is three percentage points.

It's relative -- the dollar amounts there, you'll notice the AWP ranges from 600 to 700 dollars.

So three percentage points is not an insignificant number.

Q. Is would be -- so what would three percent be of --

A. Three percent of $600, for example --

Q. Yes.

A. -- would be $18.

Q. In the scope of the issues we are talking about in this case, would you consider that difference to be of any significance?

A. Yes, I do think it is of significance.

I am not sure what criterion you are using. That's the amount for a given NDC.

This is a drug to treat a chronic problem, and so I don't think it's possible to say sort of looking at one unit, the spread, whether

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it is significant or not.
Q. Do you have any opinion as to whether that difference in the spread from 31 to 34 percent over a five-year period is significant?
A. I don't have an opinion about that.
Q. Your opinion is basically three percent is three percent?
A. That's correct.
Q. You do not -- am I correct that you do not have a chart reflecting -- let me just stick with Remicade for a moment.
Am I correct that under Dr. Hartman's minimum standard of liability, if on -- if the spread here were 30 percent instead of 31 percent, there would be no liability?
A. You are correct that Dr. Hartman's standard is 30 percent. I believe it's a hard, greater than 30 percent. So I think that would be correct.
Q. Just so we are clear, the dollar difference that we are talking about on 30 percent as opposed to 31 percent in the period

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1998 through 1999 would be how many dollars?
A. If you were talking about one percentage point difference, again, on the order of $6.
Q. Actually, it would be less because we are talking about a -- well, it's a little less than $6. So in the neighborhood of $3?
A. What percentage are you taking there?
Q. The 31. The difference between 30 percent and 31 percent?
A. As a percentage of the ASP?
Q. Yes.
A. So if the ASP is $500 --
Q. Right.
A. -- so that one percent would be $5, yes.
Q. Did you analyze to what extent a difference of one percentage point influenced physician utilization of Remicade?
A. There's no reason to believe based on economic theory and evidence that there is a threshold at which a difference doesn't matter.
We look at marginal incentive. It's a continuous notion. So why should there be a

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discontinuous notion of point at which it doesn't matter?
Q. Well, did physicians have an incentive to utilize Remicade when there was a 30 percent spread?
A. Physicians had an incentive to utilize Remicade in part as a function of the fact that there was a 30 percent spread to AWP and ASP.
Q. Did they have an incentive to use Remicade if it had 29 percent spread?
A. I am not going to offer an opinion on the what the appropriate yardstick is here.
As I've mentioned in my report, I -- one of the assumptions I make is to look at drugs for which Dr. Hartman has established they meet his yardstick for liability in the case.
Q. But you have offered opinions about financial incentives that exist. So that's the subject I am trying to explore.
Would you agree with me that -- do you believe there was a financial incentive to utilize Remicade at a spread of AWP minus 30?

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A. I don't have any reason to believe -- to form an opinion about a threshold level.
Again, I was not asked to look at determining a threshold level at which the spread would indicate liability.
Q. So would I be correct that you don't have an opinion that there was any difference in -- from a physician's perspective, as to the utilization of Remicade, whether it had a spread of 30 percent or 31 percent?
A. You are correct, I don't have an opinion as to that.
Q. Let's turn to Procrit.
Have you provided any information in your report with respect to Procrit?
A. I have not detailed any data with respect to Procrit, no.
Q. Why didn't you do a -- let me ask this: Why did you do a chart on Remicade and not on Procrit?
A. In my report, I used some examples to illustrate the incentives and their effects, and

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it was not necessary to show every drug in the class.
Q. Why did you choose Remicade instead of Procrit?
A. Remicade was an example I chose because the spreads are there, and it's a very expensive drug, with chronic-use implications, and so it's likely to be important to the class.
Q. Is Procrit an expense drug?
A. Procrit is also an expensive drug, yes.
Q. Did you look at its spreads?
A. I examined the ASPs and AWPs for all of the drugs.
Q. How did its spreads compare to Remicade spreads?
A. I don't have it memorized.
If you would like to show me some data, I would be happy to look at it.
Q. Do you have any specific opinions with respect to Procrit?
A. My opinions generalize to all the drugs in this case.

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They are with regard to common reimbursement that exists for all of the drugs with regard to common conditions among physicians in this market who administer the drugs.
So these opinions generalize to Procrit, yes.
Q. Have you analyzed the rebates and discounts to physicians on Procrit?
A. Have I separately analyzed them?
Again, I examined these data, in general terms, to examine the methodology by which the ASP was put together, but I have not looked at the detailed variation in rebates and discounts.
Is that your question?
Q. Yes.
A. Okay.
Q. Did you compare the rates of rebates and discounts to the rate of price increases and compare the two?
A. I compared the changes in AWP relative to the ASP, which accounts for those factors.
Q. What did it show?

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A. Again, I don't have that information memorized. I would need to look at the charts or the spreadsheets, if you have them.
Q. Are you aware that Procrit is sold through retail?
A. Yes, I'm aware that some forms of Procrit are sold through retail.
Q. Do you know what percentage of Procrit sales are through retail?
A. I do not.
Q. In calculating ASP, do you believe it's appropriate to include retail sales of Procrit?
A. To the extent that these drugs are subject to the litigation in this matter, those, it is my understanding, were included in the ASP.
So I don't have a separate opinion about that.
Q. Let me ask you, do you understand that Dr. Hartman's initial report in calculating ASP solely on -- or attempted to calculate ASP based solely on sales to physicians in clinics?
A. That was my understanding.

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Q. And do you understand in his supplemental report that he included -- he has calculated ASP by including multiple other classes of trade?
A. That is also my understanding.
Q. Do you have an opinion as to which is the better approach --
A. I do not.
Q. -- to calculate ASP?
MR. MACORETTA: Objection.
A. I do not have an opinion about which is the better approach.
Q. Let me ask you to turn to Page 20 of your report.
A. Okay. I am on Page 20.
Q. Let's talk about Intron for a moment.
A. Okay.
Q. I believe your discussion of it begins on Page 19.
You say the chart below shows the steady increase in both AWP and the spread for one NDC of the Schering-Plough drug Intron?
A. I see that.

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Q. Now, you go on to state that "AWP inflation was a deliberate competitive strategy."

What is your basis for saying that there was a deliberate -- that AWP was a deliberate competitive strategy with respect to Intron?

A. For all of the drugs, my conclusions are based on a standard economic analysis of the economic incentives that were present for all of these drugs, as well as looking at places, among the drugs, where one could do an events study, as we discussed earlier.

Those findings have implications for all of the drugs.

Q. I am asking you specifically with respect to Intron, what is your evidence that there was a competitive -- a competitive strategy -- a deliberate competitive strategy to inflate AWP?

A. The evidence that I use, again, is the examination of economic theory and the institutions that generate these incentives, including the reimbursement system and the

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organization of the delivery system.

Q. Would I be correct that if I look at the documents that you rely upon, you are not relying upon any internal sharing documents or testimony from anyone from Schering, correct?

A. I believe that's correct. I could check that note for you.

That appears to be correct, yes.

Q. What effort did you make to determine what Schering's internal thinking was with respect to any price changes that they made with respect to Intron from the period 1991 through 2004?

A. It was not necessary to my analysis to do that.

As an economic expert, I rely on economic theory, as well as looking at these event studies, to confirm the theory, and it wasn't necessary to go and look for every individual piece of information about that strategic use of the AWP.

Q. With respect to Johnson & Johnson and the drugs Remicade and Procrit, to what extent did

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you attempt to investigate Johnson & Johnson's decisions with respect to price changes for those two drugs?

A. Again, it was not necessary for my conclusions to do that analysis. So I did not.

Q. Well, would I be correct with respect to other defendants you do cite internal documents?

A. I do cite internal documents because they are good examples of the recognition by the manufacturers.

I did -- it was not intended to be used as a survey in any way. These were examples of the manufacturers' recognition of AWP as a competitive instrument.

Q. So would it be fair to say that when you thought you found documents that supported your position you utilized them, and if you didn't find documents for a company that were consistent with your opinion, you ignored them?

MR. MACORETTA: Objection.

A. I think it would not be fair to say that.

As part of supporting my argument that

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competitive strategy is the reason for AWP inflation, I used the defendants' own words to state those strategies.

I did not look for -- to find an inclusive set of those statements.

Q. What if for a particular defendant you found internal documents that contradicted your theory, wouldn't that be important for you to look at?

A. I found no such documents.

Q. Well, you said you didn't look for documents from Johnson & Johnson and Schering, for example, as to why they set AWPs where they did, where they took -- why they took particular price increases, correct?

A. That's correct. I used these documents to illustrate a point.

Q. So for all you know, there are documents from particular manufacturers which contradict your opinions?

A. I have no awareness of such documents.

Q. Well, if you didn't look for them, how

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would you know whether they exist?
A. Is that a question?
Q. Yes.
A. Again, I have no knowledge of documents that would contradict this theory.
Q. Well, did you ask plaintiffs' counsel for each of the defendant companies: Show me the internal documents where they're discussing with why they took price increases, why they set the AWP where they were?
A. I examined those documents where I could -- where I could find them, and again, these are the examples that I used to illustrate.
Q. And as you sit here today, you can't tell me why Johnson & Johnson took a particular price increase on Remicade or Procrit, can you?
A. As an economist, I conclude from the reimbursement environment and the incentives available to Johnson & Johnson that these price increases were, in part, driven by competitive concerns and the use of the spread between AWP and ASP.

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Q. But you did not look at the internal Johnson & Johnson documents to see what their thinking was with respect to taking a price increase on Remicade or Procrit, correct?
A. That's correct.
Q. Am I correct that the chart on Page 20 with respect to Intron shows an increase of the spread from 30 percent to 36 percent?
A. Yes, that's correct.
Q. Now, the 30 percent would fall under Dr. Hartman's minimum standard of liability; is that correct?
A. Again, I am not absolutely certain whether he used the less than or equal to or a strictly greater than 30 percent.
Do you know the answer to that question?
Q. Do you have an opinion as to what would be the right approach?
A. I do not.
MR. CAVANAUGH: Why don't we just go off the record for two minutes.

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THE VIDEOGRAPHER: The time is 11:03. We are off the record.
(Exhibit Rosenthal 013 for identification)
THE VIDEOGRAPHER: The time is 11:05. We are back on the record.
MR. CAVANAUGH:
Q. We have marked as Exhibit Rosenthal 013 an attachment from Dr. Hartman's report G.5 to -- Mr. Hartman's liability and calculation of damages report with respect to Intron.
MR. MACORETTA: Is this the supplemental report or the initial report you are showing us?
MS. NEMIROW: I don't know what copy you have there, but I believe it was from the original.
MR. O'CONNOR: The original, December 15.
Q. I am correct that the chart you prepared on Page 20 is based upon Mr. Hartman's initial report?

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A. Yes, it is.
Q. Now, you show the spread going from 30 to 36 percent in your chart; do you not?
A. I do.
Q. Now, if we look at the actual numbers from '91 to 2004 --
A. Okay.
Q. -- would I be correct that the spread in 1991 is 29.9?
A. I'm sorry, where do you see the spread -- which page are you on, sorry?
Q. I'm sorry.
A. That's okay.
Q. If you go to one, two, three, four, five, six --
MR. MACORETTA: G.5.C.
A. Right. These are the spread percentages.
Q. Right.
A. Right. I'm sorry. Okay.
Q. Now, let's just make sure we have the corresponding -- do we have the right --
A. Right.

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Q. -- NDC?
A. I think I have it, yes.
Q. Now, in 1991, the spread was 29.9, which would be below Dr. Hartman's minimum standard of liability?
A. That's my understanding.
Q. The following year it goes up to 41.6, that would be above Dr. Hartman's minimum standard of liability, correct?
A. Correct.
Q. Now, the next year it goes down to 32.7; does it not?
A. It does, yes.
Q. Now, that would still be above his minimum standard of liability, but below -- moving in a less than favorable trend to support the theory of the manufacturer having an incentive to increase the spread, correct?
A. I'm sorry, could you restate that?
Q. Sure. That was a mangled question. I apologize.
A. That's okay.

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Q. Am I correct that in 1992 -- from 1992 to 1993, the spread actually got smaller?
A. That's correct.
Q. So there was less of a financial incentive for physicians to utilize this drug in 1993 than there was in 1992, according to your opinion?
A. All things equal, according to my opinion, that's true.
Q. And then in 1994, there was even less financial incentive because the spread was down to 28 percent, which is below Dr. Hartman's minimum standard of liability, correct?
A. That's correct.
Q. And then the following year, even less financial incentive because the spread has dropped now to 22.3 percent, correct?
A. That's correct.
Q. And that it continues in the range of below Dr. Hartman's minimum standard of liability for another one, two, threes, four, five years, right?
A. That's correct.

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Q. And then in 2001, it goes up to 34 percent?
A. I see that, yes.
Q. And then it goes back down again in 2002 to below the minimum standard of liability?
A. Yes, that's correct.
Q. And then it goes back above his minimum standard of liability in 2003 and for the first quarter of 2004, correct?
A. That's correct.
Q. All right. So would you agree with me that this hardly shows a picture of a manufacturer having an intent to increase -- consistently inflate AWP?
A. I would not agree with that.
Q. You would not? Even though you see the spreads going down for periods, long periods of time, five- and six-year periods of time below Dr. Hartman's minimum standard of liability, it is your opinion looking over this 14-year -- 13-year period of time we are seeing a consistent effort to inflate AWP?

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A. These spreads show there are clearly periods during which the AWP is inflated with regard to ASP.
Q. Well, let's go back to what you said in your report.
You say, "The chart below shows the steady increase in both the AWP and the spread for one NDC of the Schering-Plough drug Intron A."
That is not an accurate statement, is it, Dr. Rosenthal?
A. I believe it is accurate.
Q. Show me the steady increase that you see from 1994 -- from 1993 through the year 2000?
Over that seven-year period, do we see a steady increase?
A. It's a not monotonic increase.
What I said about the increase between '91 and 2004 was that it was an upward trend, a steady upward trend. I didn't suggest that it never reversed direction.
Q. Well, actually, if I look at your --

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strike that.
So by "steady increase," are you referring to the fact that you can take a point in 1991 and you can then look at it in -- 13 years later, and if there has been an increase, regardless of what has happened in the interim, to you, that's a, quote, steady increase?
MR. MACORETTA: Objection.
A. What I meant to imply there is that indeed the trend is upward sloping.
Q. The trend is upward sloping regardless of what happens in the interim period, is that your opinion?
A. That is -- my opinion was that the trend was increasing over the period.
Q. Regardless of what actually happened during the interim period?
A. Again, my opinion with regard to this trend is that it shows an upward trend; and if you want to say "regardless," the data, as they are, I would interpret as an upward trend.
Q. Let me ask you this: What significance do

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you attach to the fact that in 1994 the spread was 28 percent, in 1995 the spread was 22 percent, in 1996 the spread was 21 percent, in 1997 the spread was 24 percent, all of which are lower than the 30 percent -- the 29.9 percent figure that you started out with in 1991?
A. Again, over the time period, there is an increase.
Q. Would you agree with me that at least during the period 1994 through the year 2000, over that six-year period, it certainly does not appear that Schering had an intent to inflate AWP?
A. Over that short period --
MR. MACORETTA: Objection.
A. Over that short period that you pulled out, those numbers are below Dr. Hartman's threshold.
Q. Dr. Rosenthal, do you really consider six years to be a small period of time?
MR. MACORETTA: Objection.
A. As compared to the entire time period?

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It's not the entire time period, and I was looking at over this entire time period there was an increase in the spread.
Q. It's close to half the time period, correct?
MR. MACORETTA: Objection.
A. That may be true.
Q. Well, if you think that's a short period of time, when you did your events studies, what period of time were you studying there?
A. I was looking at small changes there from year to year.
Q. And if we wanted to do an events study on Intron, what you would see looking from year to year is you would not see an effort to inflate AWP, correct?
MR. MACORETTA: Objection.
A. Which years are you talking about?
Q. Well, if you took the movement from 1992 to 1993, if you took the moment from 1993 to 1994, from '94 to '95, from '96 to '97, in none of those years you would see a -- doing an events

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study looking from year to year, you would not be seeing a -- any attempt to inflate AWP, correct?
A. If you were positing that some event took place during that time, then you would find, using Dr. Hartman's threshold, that those spreads did not meet the level of threshold that he has put forward.
Q. Let me ask you this question: If you see the spread getting smaller over a period of time, is that evidence of a lack of AWP inflation?
A. I would -- is it evidence of a lack of AWP inflation?
It's less inflation. If there is less spread, it is less inflation, yes.
Q. You've made reference a number of times to the MedPAC study. Do we also refer to that as the Dyckman study?
A. It incorporates many of the Dyckman results.
Q. Now, that was -- am I correct that the Dyckman study was based on a telephone survey?
A. I believe that's true.

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Q. And we talked yesterday about self-reporting bias and that type of thing.
Who did the surveys, the telephone surveys?
A. Researchers from the Dyckman association, is my understanding.
Q. And do you know what the script was?
A. I do not.
Q. Do you know what the actual responses were?
A. I do not.
Q. Do you know how many responses were solicited?
A. The sample size, I believe, is included in the report.
I would want to check it before I gave that number off the top of my head.
Q. Do you recall that there were roughly 33 responses?
A. That sounds like the right order of magnitude.
Q. And how many people or entities were

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actually contacted?
A. I don't know.
You mean the sample size originally?
Q. Yes.
A. I don't know the answer to that. I believe that's also in the report.
Q. Was it roughly 180?
A. That might be true. I would have to check.
Q. Am I also correct that 29 out of the 33 responses were all Blue Cross entities?
A. I will take your word for that.
Q. Do you think that created any sample bias?
A. I have no reason to believe the Blue Cross plans are different, given that it seems that all the plans use the same system.
Q. Well, Blue Cross plans could certainly be different from other plans, non-Blue Cross plans?
A. They could be. I am not sure why they would be different in the way that they reimburse physician-administered drugs.
Q. That's not something you looked at?

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A. These are the data that are available, and they were protected in the normal research strategy.
Q. Let me ask you: Yesterday you were very concerned about, and actually found irrelevant, sworn testimony given by providers under oath, but you're much more comfortable relying on a telephone survey done of 33 folks where you don't know what the questions were that were asked; is that a fair --
MR. MACORETTA: Objection.
A. No. I don't think that's fair. So --
Q. Why?
A. -- let me tell you again yesterday a couple of things I mentioned, in particular, fact-based survey research has much -- is much less prone to bias than asking individuals what the basis of their actions were in the prior period, and so asking a health plan what their -- how their contracts are written, which is essentially what the Dyckman survey asks --
Q. Do you know what particular question was

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asked?
A. I know that they asked what was the basis for reimbursement for a physician-administered drug. This is a factual question.
Q. And do you know what the actual responses were?
A. I do not know that.
Q. Would you agree with me that there lots of ways to answer that question?
A. I'm not sure what you mean by "lots of ways."
Q. Well, someone could say. "We consider AWP." Someone could say, "You know, we don't use AWP." Someone could say, "AWP may be a factor."
Are all of those possible responses?
A. In a survey done for MedPAC, which is a very important advisory body to Medicare, the researchers, I am sure, used valid research methods.
This is important data source. So I would not assume that they asked the questions in an open-ended ways to solicit those kinds of

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responses.
Q. So it's your opinion that open-ended questions were not utilized?
A. I don't know. As I mentioned before, I don't know the precise questions.
Q. Okay. We talked yesterday briefly about market failures that exist in medical care markets.
Have you measured the economic effects of these market failures on prices over the class period?
A. Have I measured the economic effects of imperfect information on prices?
No, I have not.
Q. Would you agree with me -- now, you say on Page -- turn to Page 13.
A. Of my report?
Q. Yes.
A. Okay. I'm on Page 13.
Q. You say, "Payers are unable to make apples-to-apples comparisons."
Do you see that?

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A. Yes, I do.
Q. Would you agree with me that the payers of purchased drugs have knowledge of their own acquisition prices?
A. To the extent that a payer buys directly --
Q. Yes.
A. -- as we were talking about yesterday, certainly to the extent that a payer buys directly, it would have knowledge of what it paid for those direct purchases.
Q. And did you undertake any study of the extent to which third-party payers looked to their acquisition prices in determining actual acquisition costs for physicians?
A. As we discussed yesterday, I did not do that study, and I don't believe it's relevant because payers are much more substantial buyers of those drugs than the physicians would be.
I would not believe that they would assume that the physicians receive as large discounts as they do.

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Q. So that's an assumption that you are making, correct?
A. That's assumption based on economic theory and evidence.
Q. What did you do to test that assumption?
A. It was not relevant to my report to test that assumption here.
Q. Well, wouldn't you want to test to see to what extent payers take into consideration their acquisition costs in determining what other purchasers in the market might be paying?
A. No.
Q. You go on to say on Page 13, Paragraph 17, "Payers have great difficulty in excluding physicians from their network on the basis of price and thus are weak negotiators."
A. I see that.
Q. What's your support for that assertion?
A. It's well-known in the U.S. healthcare market that managed care networks are large and overlapping and tend to be not very exclusive, particularly with regard to the specialists, of

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whom there may be only a few in the market or only a few organizations thereof.
Q. Do you cite -- any of the documents that you cite in your appendix support that proposition?
A. I don't provide specific cites about that negotiating power element.
The chapter by Tom Maguire on physician agency deals with this notion of the unobservable ability of physician actions and the applications for contract --
Q. Can you give me that again?
A. There is chapter Tom Maguire that is cited on physician agency. It's in The Handbook of Health Economics.
Essentially, that -- it reviews and integrates the literature on contracting with physicians.
Q. Is it your opinion that all payers are weak negotiators with physicians?
A. In relative terms, it's my opinion that this problem of asymmetric information makes